AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (withdrawn) A method of treating multiple myeloma or lymphoma in a patient, the method comprising administering to the patient, a recombinant antibody-based molecule comprising two targeting units and two antigenic units connected through a dimerization motif, or a nucleic acid encoding said recombinant antibody-based molecule

2. (withdrawn) The method of claim 1, wherein administering the nucleic acid comprises delivering the nucleic acid by electroporation.

3. (withdrawn) The method of claim 1, wherein said targeting unit(s) is/are a single chain fragment variable of Ig (scFv).

4. (withdrawn) The method of claim 3, wherein said scFv is anti-HLA, anti-CD14, anti-CD40, or anti-toll-like receptor.

5. (withdrawn) The method of claim 4, wherein said anti-HLA is anti-HLA-DP.

6. (withdrawn) The method of claim 4, wherein said anti-toll-like receptor is anti-toll-like receptor 2.

7. (withdrawn) The method of claim 1, wherein at least one targeting unit is a ligand.

8. (withdrawn) The method of claim 7, wherein said ligand is soluble CD40 ligand or a chemokine.

9. (withdrawn) The method of claim 7, wherein said ligand is a chemokine.

10. (withdrawn) The method of claim 9, wherein said chemokine is RANTES or MIP-1α.

11. (withdrawn) The method of claim 9, wherein said chemokine is MIP-1α.

12. (withdrawn) The method of claim 1, wherein at least one targeting unit is a bacterial antigen.

13. (withdrawn – currently amended) The method of claim 12, wherein the bacterial antigen is a ~~flaggelin~~ flagellin.

14. (withdrawn) The method of claim 1, wherein the targeting units have the ability to target antigen presenting cells (APC).

15. (withdrawn – currently amended) The method of claim 1, wherein the targeting units have the ability to target ~~HLA-DP~~ HLA, CD14, CD40, a toll-like ~~receptors~~ receptor, or a chemokine ~~receptors~~ receptor.

16. (withdrawn) The method of claim 15, wherein said HLA is HLA-DP

17. (withdrawn – currently amended) The method of claim 1, wherein the targeting units have the ability to target a chemokine ~~receptors~~ receptor.

18. (withdrawn) The method of claim 1, wherein the antigenic unit(s) is/are an antigenic scFv.

19. (withdrawn) The method of claim 18, wherein the antigenic scFv is derived from a monoclonal Ig produced by myeloma or lymphoma.

20. (withdrawn) The method of claim 18, wherein the antigenic unit(s) is/are a telomerase, or a functional part thereof.

21. (withdrawn) The method of claim 20, wherein said telomerase is hTERT.

22. (withdrawn) The method of claim 1, wherein the antigenic unit(s) is/are derived from a bacterium.

23. (withdrawn) The method of claim 22, wherein the bacterium derived antigenic unit(s) is/are a tuberculosis antigen.

24. (withdrawn) The method of claim 1, wherein the antigenic unit(s) is/are derived from a virus.

25. (withdrawn) The method of claim 24, wherein the virus derived antigenic unit(s) is/are derived from HIV.

26. (withdrawn) The method of claim 25, wherein the HIV derived antigenic unit(s) is/are derived from gp120.

27. (withdrawn) The method of claim 1, wherein the dimerization motif comprises a hinge region and an immunoglobulin domain.

28. (withdrawn) The method of claim 27, wherein the hinge region is Ig derived.

29. (withdrawn) The method of claim 27, wherein the hinge region has the ability to form one or several covalent bonds.

30. (withdrawn) The method of claim 29, wherein the covalent bond is a disulphide bridge.

31. (withdrawn) The method of claim 27, wherein the immunoglobulin domain is a carboxyterminal C domain, or a sequence that is substantially homologous to said C domain.

32. (withdrawn) The method of claim 31, wherein the carboxyterminal C domain is derived from IgG.

33. (withdrawn) The method of claim 27, wherein the immunoglobulin domain has the ability to homodimerize.

34. (withdrawn) The method of claim 33, wherein said immunoglobulin domain has the ability to homodimerize via noncovalent interactions.

35. (withdrawn) The method of claim 34, wherein said noncovalent interactions are hydrophobic interactions.

36. (withdrawn) The method of claim 1, comprising administering the nucleic acid to the patient to induce production of the recombinant antibody-based molecule.

37. (withdrawn) The method of claim 1, comprising administering a vector comprising the nucleic acid.

38-76. (cancelled)

77. (withdrawn) A method of preparing a recombinant antibody-based molecule comprising:

a. transfecting the vector of claim 73 into a cell population;

b. culturing the cell population;

c. collecting recombinant protein expressed from the cell population; and

d. purifying the expressed protein.

78-82. (cancelled)

83. (new) A nucleic acid encoding a recombinant antibody-based molecule, wherein said antibody-based molecule comprises two targeting units and two antigenic units that are connected through a dimerization motif.

84. (new) The nucleic acid of claim 83, wherein at least one of said targeting units is a single chain fragment variable of Ig (scFv).

85. (new) The nucleic acid of claim 84, wherein said scFv is anti-HLA, anti-CD14, anti-CD40, or anti-toll-like receptor.

86. (new) The nucleic acid of claim 85, wherein said anti-HLA is anti-HLA-DP.

87. (new) The nucleic acid of claim 85, wherein said anti-toll-like receptor is anti-toll-like receptor 2.

88. (new) The nucleic acid of claim 83, wherein at least one of said targeting units is a ligand.

89. (new) The nucleic acid of claim 88, wherein said ligand is soluble CD40 ligand or a chemokine.

90. (new) The nucleic acid of claim 88, wherein said ligand is a chemokine.

91. (new) The nucleic acid of claim 90, wherein said chemokine is RANTES or MIP-1α.

92. (new) The nucleic acid of claim 90, wherein said chemokine is MIP-1α.

93. (new) The nucleic acid of claim 83, wherein at least one of said targeting units is a bacterial antigen.

94. (new) The nucleic acid of claim 93, wherein said bacterial antigen is a flagellin.

95. (new) The nucleic acid of claim 83, wherein said targeting units have the ability to target antigen presenting cells (APC).

96. (new) The nucleic acid of claim 83, wherein said targeting units have the ability to target HLA, CD14, CD40, a toll-like receptor, or a chemokine receptor.

97. (new) The nucleic acid of claim 96, wherein said HLA is HLA-DP.

98. (new) The nucleic acid of claim 83, wherein said targeting units have the ability to target a chemokine receptor.

99. (new) The nucleic acid of claim 83, wherein at least one of said antigenic units is an antigenic scFv.

100. (new) The nucleic acid of claim 99, wherein said antigenic scFv is derived from a monoclonal Ig produced by myeloma or lymphoma.

101. (new) The nucleic acid of claim 83, wherein at least one of said antigenic unit is a telomerase or a functional part thereof.

102. (new) The nucleic acid of claim 101, wherein said telomerase is hTERT.

103. (new) The nucleic acid of claim 83, wherein at least one of said antigenic units is derived from an infectious agent.

104. (new) The nucleic acid of any one of claims 83 or 103, wherein at least one of said antigenic units is derived from a bacterium.

105. (new) The nucleic acid of claim 104, wherein said bacterium-derived antigenic unit(s) is/are a tuberculosis antigen.

106. (new) The nucleic acid of any one of claims 83 or 103, wherein at least one of said antigenic units is derived from a virus.

107. (new) The nucleic acid of claim 106, wherein said virus-derived antigenic unit(s) is/are derived from HIV.

108. (new) The nucleic acid of claim 107, wherein said HIV-derived antigenic unit(s) is/are derived from gp120.

109. (new) The nucleic acid of claim 83, wherein said dimerization motif comprises a hinge region and an immunoglobulin domain.

110. (new) The nucleic acid of claim 109, wherein said hinge region is Ig-derived.

111. (new) The nucleic acid of claim 109, wherein the hinge region has the ability to form one or several covalent bonds.

112. (new) The nucleic acid of claim 111, wherein said covalent bond is a disulphide bridge.

113. (new) The nucleic acid of claim 109, wherein said immunoglobulin domain is a carboxyterminal C domain or a sequence that is substantially homologous to said C domain.

114. (new) The nucleic acid of claim 113, wherein said carboxyterminal C domain is derived from IgG.

115. (new) The nucleic acid of claim 109, wherein said immunoglobulin domain has the ability to homodimerize.

116. (new) The nucleic acid of claim 109, wherein said immunoglobulin domain has the ability to homodimerize via noncovalent interactions.

117. (new) The nucleic acid of claim 116, wherein said noncovalent interactions are hydrophobic interactions.

118. (new) The nucleic acid of claim 83, formulated for administration to a patient to induce production of said recombinant antibody-based molecule.

119. (new) A vector comprising the nucleic acid according to claim 83.

120. (new) A cell line comprising a nucleic acid according to claim 83 or the vector according to claim 119.

121. (new) A pharmaceutical composition comprising a nucleic acid according to claim 83 or a degenerate variant thereof or the vector of claim 119, in combination with a physiologically acceptable diluent or carrier.

122. (new) A pharmaceutical composition comprising a cell of the cell line according to claim 120, in combination with a physiologically acceptable diluent or carrier.

123. (new) A kit for preparation of a recombinant antibody-based molecule encoded by the nucleic acid according to claim 83, the kit comprising a nucleic acid according to claim 83.

124. (new) A vaccine composition against cancer or infectious disease, comprising an immunologically effective amount of the nucleic acid according to claim 83 or a degenerate variant thereof, wherein said composition is able to trigger both a T-cell- and B-cell immune response.

125. (new) The vaccine composition of claim 124, further comprising a pharmaceutically acceptable carrier.

126. (new) The vaccine composition of any one of claims 124 or 125, wherein said cancer is multiple myeloma or lymphoma.

127. (new) The vaccine composition of any one of claims 124 or 125, wherein said infectious disease is a bacterial infection.

128. (new) The vaccine composition of claim 127, wherein said bacterial infection is tuberculosis.

129. (new) The vaccine composition of any one of claims 124 or 125, wherein said infectious disease is a viral infection.

130. (new) The vaccine composition of claim 129, wherein said infectious disease is AIDS.